

columns are exposed along the open face regions of the base plate. However, the gels are retained within each individual channel. This cassette with gels retained within, are exposed to developing solutions that communicate with the gel and form an image thereon. The appropriate stopping solutions are applied and images are formed on the gel within the base plate of the gel cassette. The resulting gels can be photographed or sealed and dried. Because developing gels within the cassettes of the present invention protects actual gels from physical damage, many cassettes can be used to develop gels simultaneously, thereby increasing the throughput potential of gel development.

The cassettes of the present invention can be made of plastic, plastic composites, polymers, glass, or other suitable rigid materials. Adhesive materials can be tape, elastic compounds, clamps or other fastening devices. Suitable adhesives may be epoxy resins, silicone based or other polymer based adhesives.

Variations in the material as well as the size, shape or positioning of the elements are within the scope of the present invention. The embodiments of the present invention can be used for precast gels or casting gel systems such as multi-cast systems.

What is claimed:

1. A cassette comprising:

- a. a base plate having channels formed thereon extending longitudinally across the base plate wherein the channels have open face regions;
- b. an outer plate removably secured and proximate to the base plate thereby covering the open face regions and forming closed individual chambers wherein a gel is

to be disposed or casted within and whereupon removal of the outer plate, the channels retain the gel while exposing the gel along the open face regions.

2. The cassette of claim 1, wherein said cassette is composed of a material selected from glass, plastic, or other polymer composite material.

3. The cassette of claim 1, wherein said outer plate is removably secured to the base plate along the peripheral edges of the outer plate where the outer plate meets the base plate using adhesive material or clamping device.

4. The cassette of claim 1, wherein said closed chambers have openings at opposite ends.

5. The cassette of claim 1, wherein said closed chambers have openings between chambers thereby allowing the polymerizing gel solution disposed inside the chambers to communicate between chambers.

6. The cassette of claim 1, wherein said base plate has along the surface of the channel, indentation cavities wherein a gel can polymerize therein.

7. The cassette of claim 1, wherein said channels are formed from a solid base plate having void spaces running the length of the base plate.

8. The cassette of claim 1, wherein said channels are formed by raised T rails fixed upon the base plate and running parallel from one another.

9. The cassette of claim 8, wherein said T rails are extruded and formed as a solid piece with the base plate.

10. The cassette of claim 8, wherein said T rails are formed from rail blocks, raised from the base plate and made as a solid piece with the base plate or attached to the base plate, where flat plates are attached to the blocks to form T rails.

11. A method of using a cassette comprising the steps of:

a. placing an outer plate on the surface of a base plate having channels with open face regions;

b. securing the outer plate to the base plate with an adhesive material or clamping device thereby forming a sandwich and closing the open face regions to form closed chambers between the outer plate and the base plate except for the opening at opposite ends of each chamber; and

c. sealing the exit openings with removable adhesive material or clamp device thereby readying the gel cassette to receive a gel polymerizing solution within the closed chambers.

12. The method of claim 11, wherein a gel polymerizing solution is poured into the closed chambers and thereafter polymerizing to form gel columns with sufficient void volume at the top to load samples within each gel column.
13. The method of claim 12, wherein said samples for gel electrophoresis separation are loaded into said chambers of the cassette.
14. The method of claim 13, wherein said cassette with loaded samples are inserted into an elution system thereby resolving the loaded samples through the gel columns.
15. The method of claim 14, wherein said cassette after gel elution, is removed from the elution system and the outer plate is removed from the base plate thereby opening the chamber and exposing the gel columns along the open face regions of the channels.
16. The method of claim 15, wherein said cassette with open face regions exposing the gel columns are treated with an image developing solution.
17. The method of claim 16, wherein said developing solution communicates with the gel columns through the open face regions along the channels thereby forming an image on the gel and subsequently treating said cassette with fixing solution.

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